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AT WAR

# RADIO IN WARTIME

by

CHARLES SIEPMANN

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No. 26

AMERICA IN A WORLD AT WAR

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*By*

CHARLES SIEPMANN

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This pamphlet describes and summarizes the effect of radio on the conduct and impact of modern war. It shows how modern strategy literally depends on use of radio communication and describes, too, the 'fourth front' of propaganda warfare which radio has opened up.

In reviewing radio's war time uses in perspective, it suggests that radio today, in war, is in 'dress rehearsal' for the peace that will come later. War is its testing time. Its future — and our own — depends in no small measure on what it can now achieve by way of prosecuting the strategy of truth and service to the public.

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Born in England, a graduate of Oxford University, Charles Siepmann served as an artillery officer in World War I. For twelve years he was with the British Broadcasting Corporation. In its pioneer days he directed and developed its educational services, was successively Director of Talks and Director of Program Planning, and served on the British Government Committee which determined radio's role in war time before the outbreak of hostilities in September 1939. From December 1939-March 1942 he was University Lecturer at Harvard University, acting as adviser to the President on radio developments and conducting research on the social and educational significance of radio in the U. S. Having made a special study of radio propaganda, in March 1942 he became a consultant in the Radio Division of the O.F.F., which has since been absorbed by the Office of War Information.

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## RADIO IN WARTIME

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War precipitates change. The First World War, for instance, established the United States of America as the leading industrial country in the world. It advanced air transportation by perhaps a generation. It was the spark that set revolution ablaze in Russia. The present war will likewise change us all — our outlook, our way of living, our international relations, and the uses to which we put the research and inventions of the scientist. Radio, which is at once the most wonderful of all inventions and one of the most powerful of modern influences on our outlook, our way of life and world relations, radio, too, will be changed by war. That makes knowledge of how it is being used in wartime worth while. It is a little candle by the light of which to peer into the darkness of our future. The conduct of modern warfare is practically impossible without the use of radio. The same is true, as we shall see, of modern peace. With an eye on peacetime, let us look at radio in wartime.

### 1. Radio Propaganda

Radio is an instrument of modern war; it goes out to battle on its own account. For radio has taught us, to our cost, that ideas are weapons. 'In wartime,' says Hitler, 'words are acts.' In this sense we have been at war far longer than we usually recognize. German shortwave propaganda to the American continent began as long ago as 1933. Its use against us and against other countries has been much publicized. Lord Haw Haw is familiar to millions who never heard his voice. Our own Benedict Arnolds — men like E. D. Ward, Otto Koischwitz, Fred Kaltenbach, once residents in this country and now the voices of Berlin — are only a little less familiar. We know, too, how, long before that tragic armistice, French

troops in the Maginot Line and the civilian population throughout France had been embittered, softened, and demoralized by the 'strategy of terror' of German radio broadcasts. A vague familiarity, in fact, has bred a dangerous contempt. We tend to write off the danger of what is familiar. Fear is of the unknown. How much, however, do we really know of propaganda — of its extent, its purposes, and methods? Are we, for instance, fully aware of its extent? How many know and understand the implications of the fact that Germany, Italy, Japan, each of them broadcast daily in more than thirty languages? Radio propaganda is the greatest export industry of modern times. Its verbal cargoes are shipped to every corner of the globe, the packages variously made up to suit the tastes and needs of each recipient. We cannot bar their entry. Radio comes across an undefended frontier in continuous waves of verbal assault. It is the modern streamlined substitute for the slow, piecemeal methods of the pamphleteer and dropper of leaflets in the last World War. It infects the very air we breathe. Whether we ourselves listen or not, the propagandist's message gets conveyed to us on other's lips, on wings of rumor, through second-hand reports. Our own radio and press quote from it. The time, the trouble and the money squandered on it alone should make us wary. It has been estimated that Germany spends over \$540,000,000 annually on propaganda. What is it all for?

Its ultimate purpose is to induce throughout the world a slave mentality. The object of propaganda, Hitler says, is the 'psychological decomposition of the masses.' His propaganda is thus a weapon to be used for an outrageous purpose. It is an assault on our individuality, the denial of our right to be ourselves. Its present use, of course, has to be studied in the context of war. But we cannot, therefore, dismiss it as an exceptional or temporary intrusion on our lives. For the Nazi objective implies a continuing and universal state of war. The assault of German propaganda, as that of its armies, cannot cease as long as one voice anywhere is raised in individual protest against it. The scale of operations is, therefore, world wide, the duration endless; for what is sought is universal subjection and, thereafter, the maintenance of per-

manent submission. This is Hitler's political objective. His propaganda is the means thereto.

But we shall be dangerously deceived if we, therefore, think that it beckons us directly to our doom, that enemy propaganda is attempting to *convert* us to totalitarian belief. Germans and Japanese are realists. They do not waste time attempting the impossible. Their methods are more subtle and more sinister. The victory they seek is not that of the proselyte. Conversion is not necessary; 'psychological decomposition,' prelude to slavish submission, is all they look for. For, with this achieved, our wills, our walls of Jericho, will surely fall when the fatal trumpet blares. Are we aware of this? Do we appreciate the skill of their technique?

In broad outline we do. We know they speak to us in our own language, using our native idiom, alluding to familiar facts and figures in our history and our contemporary scene, only to distort them for their own wicked purposes. We know about their spuriously intimate approach, their effort to identify themselves with our fears and prejudices, how step by step they lead us on to suspicion and disunion. First in general terms, later specifically, they identify scapegoats for us — for the poor man the industrial juggernaut, for the rich the corruption of trade unions, for the Gentile the Jews; today it is a 'certain newspaper' that distorts the news for us. Tomorrow it is 'the American press.' Today a certain politician or diplomat is hauled over the coals, more in sorrow than in anger. But tomorrow the scapegoat embraces the whole diplomatic corps, and 'our government.' Then prejudices are linked together. The prejudice against Jews, the suspicion of government, the resentment against profiteers are all strung on one chain, like so many beads to make a necklace of resentment round our throat, and it is 'our government of capitalistic Jews' that is responsible for all our woes. Between ourselves and our allies the same divisionist tactics are used. Britain in particular is consistently denounced as treacherous and imperialist. Why, we are asked, should we send our troops overseas to fight Britain's war?

All this we know. But do we recognize as clearly our propensity to fall for such appeals? Are we familiar, as are the

- enemy, with all that modern psychological research has proved about the frailty and waywardness of human nature? We oppose the enemy with our conscious minds. Behind this
- Maginot Line we feel ourselves impregnable. But radio propaganda drops its verbal parachutes into the hinterland of our subconscious mind, where doubt and fear and hatred lurk. It needs little reflection for anyone of us to recognize how easily our outlook and judgment become impaired by the injection of doubt or of suspicion. We house, each one of us, a little hell of dormant hatreds and anxieties. Custom and self-discipline only restrain them. They are not purged. It seems, at times, indeed, as though we harbor a *desire* to hate, so readily and so unreasonably do we respond to vile insinuations, mean suspicions. We believed the worst about Pearl Harbor until the President corrected us. Not a few have believed that the British have been fighting the war 'to the last Australian,' that they so fought the last Libyan campaign. As a matter of fact, not a single Australian took part in this campaign. This is the psychological decomposition the enemy aims at — division, doubt, and fear, within one nation and between the United Nations. The method is all in a phrase of Hitler's — 'mental confusion, contradiction of feeling, indecision, panic, these are our weapons.' And the voices of the air, reaching us eleven hours a day from Germany, over four hours a day from Italy, and four and one-half hours from Japan, build up the mounting crescendo of that frightful phrase towards its climax of panic with the precision, the finesse, and perfect ensemble of a well-trained orchestra.
  - Some have criticized German radio propaganda for being monotonous and inelastic. It repeats, they say, the same tricks over and over again. That is an over-sophisticated point of view. Such critics overlook the psychological effects of endless repetition. We in America, familiar with the increasing profits won from advertising on the radio, are not likely to be in too great a hurry to discount the effectiveness of repetitive suggestion.
  - The propagandist, like the advertiser, knows (better than we know it ourselves) how suggestible we are, and he knows, too, that radio is the *preferred medium of the more suggesti-*



*ble* among us. For, over and above its universal range, radio has this further advantage over other media of communication — that it exerts over many listeners an almost hypnotic influence, so that for them the borderline between fact and fancy becomes obscured. Daytime serials are often quoted as examples of this hypnotic influence. Many listeners, indeed, escape by radio into a world of fantasy more real to them than their actual life. They 'take it' like a drug, as an escape from hard reality. Some of our peacetime programs have long indulged this morbid taste and induced a dangerous credulity among listeners. It is to such credulity that radio propaganda from abroad appeals. We inherit this liability from our peacetime practice.

Many, however, are prone to dismiss radio propaganda as insignificant *because few listen to it*. Estimates of how many tune in to foreign stations vary. They range between 5 to 10 per cent of our domestic audience for radio. It is believed that some 150,000 listeners are tuned into Germany on any given night. Nothing certain, however, is known; though of one thing we can be sure — that many more listen than will admit to doing so. But the size of the audience for enemy propaganda is a false measure of its significance. For its immediate audience is quickly multiplied a hundredfold by word of mouth. Radio is still outrivalled in the speed of its communication by the grapevine which carries rumor and gossip. Shortwave broadcasts are the great arterial highways along which the enemy's cargoes of lies and innuendo are brought into our country. At every intersection there are men waiting to unload these wares and to convey them further down the sideroads. It is known, e.g., that before the war editors of Bund newspapers, spies, and fifth columnists took their cues from German and Italian broadcasts. Radio provided them with their directions; by radio they synchronized their activities, changed or modified their policies and practice. Such of them as are left no doubt still ply the trade.

But again let us not deceive ourselves. The danger of spies and fifth columnists is great. The greater danger is in ourselves. Mental confusion, contradiction of feeling, indecision, panic. The sole immunity to propaganda is to be found in

purging these from our systems. As, with infections of the body, the red blood corpuscles muster in millions to resist the 'invading' poison, so with infections of the mind and spirit only the mustering of clear thought, fine feeling, and decision can avail us. War, as a great soldier recently said in this country, challenges us to victory both over the enemy and over shortcomings in ourselves and in our way of life. Survival is not enough, either as a war incentive or as a peace objective. The philosophy of the psychological decomposition of the masses has to be countered by a creed not only more enlightened and humane but more resolute and more uniformly honored.

Radio in wartime accentuates the need of unity, of putting first things first. For, all impressions of disunity, all pettiness, all mean, unmeritable speech or action is cast back in our faces by the propagandist from abroad. And, what is worse, it is bruited abroad the world over. For ours is but one of over thirty languages used by the enemy. Because of radio we wash our dirty linen in the public eye, not of our fellow countrymen alone, but of the world at large. To Russia the voices of those who bait 'communists' are carried with gleeful accuracy by our enemies. To England every hasty word of blame is likewise conveyed. Radio thus enjoins on us a discretion that we flout to our peril, seeing that our peril is one with that of all surviving democratic countries.

What, next, of our own counter-propaganda?

We, of the United Nations, repay the enemy in his own coin — but with a difference and a disadvantage. The difference is that, while we, too, seek to break enemy morale, we seek it 'for the duration' only. Beyond the war we see and seek a resurrection of men's individual spirit, not its 'decomposition' to mass inertia. We fight back, too, not with deceit but with, as we hope, the more effective weapon of the truth as we see it, truth of fact and truth of purpose. Our disadvantage is threefold. (1) We are late starters. Germany had nearly ten years' experience of the use of propaganda before the war broke out. We had none. (2) The United Nations are still on the defensive — in the shooting war. This may seem irrelevant, but those who have studied German propa-

ganda know how nicely its strategy is geared to the strategy of the fighting forces. Radio propaganda is most effective when it foreshadows and then aggravates the demoralization induced by defeat in battle. True, France was demoralized by propaganda before the German invasion. But this is a misleading analogy. Morale in France was weak before war broke out. In Germany it was not. Germany's youth even now holds fanatically to its indoctrinated faith in the Fuehrer. Until the winter campaign in Russia, Germans were, further, flushed with an unbroken sequence of unprecedented victories. Our propaganda faces a fierce resistance. Offensive propaganda during a defensive war is not impossible. It is just harder. 'Words in wartime are acts.' But when the words of propaganda and the acts of battle speak in a contrary sense, there is the danger and embarrassment of discord. (3) Many see the solution to our dilemma in an offensive propaganda campaign conducted in terms of a declaration of war aims which outbids the claims on world attention made by the Axis powers. But here again we are at a disadvantage. Our peace aims, being democratic, are based on the concept of free negotiation between free nations. We know the difficulties we shall face, and cannot therefore offer a panacea for the troubles of the world that has the orderly precision of Hitler's vision of a beehive world, with Germany as the queen bee and the rest of mankind as the drones. German philosophy has always been attracted by the notion of orderliness. The United Nations adhere obstinately to the belief that a schematic world order which reduces the role of individuals to that of cogs in a gigantic machine is a denial of the meaning and purpose of human existence, which is self-development. The diversity of social and political systems, within the framework of democratic idealism, represented by the United Nations is the symbol of their strength and the measure of their embarrassment in this context of counter-propaganda. The world rejects the Axis queen bee's invitation to it to become her drones. To the United Nations it looks for an alternative prospect. By way of the Atlantic Charter we move, perhaps over-cautiously, towards its formulation. Our trouble is that 'hope deferred maketh the heart sick.'

• But meantime we and our allies have not been idle. Britain, herself a late starter, has long since organized her propaganda in thirty-six languages. German listeners were early won by interpolating in news broadcasts the names of German prisoners captured by the British. But they needed no such bait. The hunger for news and for authenticity, which rigorous censorship always induces, has long been ravenous in Germany. If there were no other evidence that British (and American) broadcasts are heard in Germany, it could be found in the frequency of Dr. Goebbels's irritated denials of 'enemy claims.' Germans, on pain of arrest and execution, may not listen to foreign stations. Why, then, if none listens, advertise these broadcasts by denial and by counter-argument?

• Britain has relied on two main appeals, that of authentic news and that of exposure to the befuddled German people of the lies and inconsistencies in the Fuehrer's public statements. His whole life has been ingeniously re-enacted in broadcast dramatizations, each episode disclosing the hypocrisy and the deceitfulness of assurances and promises that he has made, the Fuehrer's own recorded voice being used effectively to drive home the disconcerting authenticity of the exposure.

We, in America, have had to improvise our propaganda at short notice and under exceptionally difficult conditions. We have not plied this shoddy trade before; our broadcasting system was — and is — in private hands. We have a continent to organize and to co-ordinate. But the job, though incomplete, is already well advanced. With only six months of war behind us we are already broadcasting in twenty-six languages; eleven powerful shortwave transmitters are in use, others are under construction. Responsibility for covering the field of foreign broadcasting is divided between two government agencies. That headed by Nelson Rockefeller directs broadcasts to South America. Broadcasting to the rest of the world is the responsibility of the Office of War Information. Already we collaborate with our allies. With Britain we have established close relationship. To secure wider reception for our broadcasts to the enemy, shortwave trans-

missions from this country are picked up in England and relayed from there to Germany and to the continent on medium waves, to which more listeners can tune in. Closer interallied co-ordination is in prospect both in regard to the timing and the content of our foreign broadcasts. We work towards a common strategy, though lacking as yet anything equivalent to the unified command represented by Dr. Goebbels's Ministry of Propaganda. The internal organization of our counter-propaganda is still in a transitional stage. Shortwave broadcasting before the war was in private hands. It still largely remains so. Shortwave transmitters and their staffs are owned by private companies. The Office of War Information has been added as the agency of government which initiates policy suggestions, and itself plans and produces part of the output over our shortwave transmitters. Thus policy is mainly decided by the government's agency while the execution of programs is still partly in the hands of privately owned broadcasting stations. The Government now contemplates 'leasing' all the time on these privately owned shortwave stations, while they continue to be operated by their present owners, with both the Office of War Information and private operators providing programs. It can hardly be doubted that even this is a transitional phase of organization only. We are mobilized for war. Radio propaganda is a vital weapon of war. The logic of necessity is likely to force us in time to enlist radio shortwave transmitters for the duration and to direct and execute the strategy of verbal warfare under a unified command. We cannot claim that without radio the war cannot be won. But we can be certain that its length as well as its outcome can be materially affected by the success or failure of our verbal parachutes.

We have spoken so far only of the enemy as a target for propaganda. But most of the languages broadcast are spoken by neutrals or by peoples sympathetic to the United Nations, but at present occupied by Axis powers. On these people the final outcome of the war may yet depend only less surely than on our own concerted efforts. To them, and particularly to the suppressed nations, the value of radio communication is obvious. Radio is their only means of contact with their

friends, the sole source of hope and of encouragement. What radio can do to bring such hope and offer such encouragement is illustrated by the recent V for Victory campaign. Its effect in Belgium, Holland, France, Czechoslovakia, and Greece, in fact in all the oppressed nations of Europe, shows the scope and opportunity that still awaits us in the field of radio propaganda. The governments in exile, similarly, keep touch with their own people by radio. Occupied countries, it is true, are forbidden to listen. But despite all threats it has proved impossible to stop them listening. The enemy has had to admit defeat and has resorted to counter-propaganda. Thus in Belgium the German-controlled Brussels newspaper *Le Soir* has lately started a column for 'secret listeners' in which London broadcasts are answered from day to day!

Like Britain's, our strategy of propaganda both to the enemy and to other countries relies mainly on the transmission of a regular and reliable news service. To supplement this service, to communicate hope to the occupied countries and fear to the enemy, our news bulletins and broadcast talks reveal the scale of our mounting resources of men and of equipment. We play, too, on the conscience of the Germans by revealing to them, through the mouths of eyewitnesses, the revolting treatment meted out to men and women in occupied territories. Technical difficulties of transmission prevent us from adopting the ingenious and dramatic techniques devised by the Russians. Germans have lately been startled, on the occasion of speeches by Nazi leaders, to hear them interrupted by laughter and ribald comment interpolated by the Russians over transmitters whose frequency is adjusted to that of the German stations over which these speeches go out!

By such devices the delicate and difficult techniques of psychological warfare are slowly being perfected. Simply to enumerate the number of languages in which our broadcasts are transmitted is to obscure the complexity of the task we face. Broadcasts in each language require expert knowledge of the temperament, outlook, and susceptibilities of the particular nation addressed. The borderline between carrying conviction and occasioning offense is often thinly drawn. Fortunately for us, the enemy's persecution of its own people

and of other nations has provided us with a rich harvest of talent among the thousands of exiles from Europe who have found refuge with us. A virtual league of nations in fact is already busy assisting in the prosecution of our counter-propaganda.

## 2. Radio's Monitoring Service

Monitoring is one of the words for which war is winning wider currency. It describes an activity which is already part of the 'war of ideas.' It is an extension of a peacetime practice. The monitors of the FCC were the peacetime 'traffic cops' of radio's aerial highways. It was their duty to see that all licensed operators of radio stations throughout the country kept to their allotted wavelengths, for the smallest deviation involves interference with stations on adjacent frequencies. The FCC monitors continue in war their peacetime patrolling of the air, for strict adherence to allotted frequencies is now more than ever important in view of listeners' increased dependence on radio as a source of information. There is, further, the danger of unlicensed use of radio frequencies by agents of the enemy. With submarines off our coasts and enemy agents in adjacent countries, the danger of conveying information to the enemy by radio is great. Amateur radio communication in the United States was banned on December 7, 1941. But this offered no guarantee that illegal use of radio would not continue. As a precaution, therefore, a new adjunct of the field division of the FCC was created. It is known as the National Defense Operations Section. Its appointment dates back to July 1940, and insures a continual and effective policing of all radio communication channels.

Using funds made available for the emergency, the Federal Communications Commission has set up ninety-one monitoring stations at strategic points throughout the United States, its territories and island possessions. Eleven of these are 'primary' monitoring stations, eighty are secondary. Each of the latter is supplemented by a mobile 'direction-finder intercept station.' Their location is secret, but there is at least one in every state. This is how they work.

When an illegal operator is detected on the air, direction-finding apparatus is used to locate him. A bearing on the signal is got by three or more monitoring stations. 'Their beams are plotted on a map. Eventually and inevitably two lines will cross. The point of intersection marks the general area within which the illegal transmitter is located. The final task of running down the offender is carried out by monitoring officers, using automobiles equipped with up-to-date and delicate instruments for this detective work. The operation of this mobile equipment is roughly similar to that of the monitoring stations. Directional beams finally 'fix' the exact location of the transmitter in question. Even if the hunt narrows to an apartment house, hotel, or other large building, a monitoring officer can, by using a device carried in his hand or in his pocket, proceed from floor to floor, door to door, until he determines the exact room in which the equipment is being used.'\* It was by such methods that in England enemy agents were tracked down in the first months of war. These agents, perfecting the strategy of terror, were found to be broadcasting, particularly in large ports, where their signals were picked up by British listeners. The impression created was that these broadcasts emanated from Germany itself, and confusion and dismay resulted from the seeming accuracy of the reports of ship movements in and out of port and other activities familiar to listeners in the locality.

The effectiveness of our monitoring service is shown by figures published by the FCC, which reports that several thousand complaints of various illegal radio operations were handled throughout 1941. A total of 251 transmitters were found to be operating without licenses. This figure should silence those who before Pearl Harbor ridiculed expressions of concern over the enemy's fifth column activities within our country.

But a far more impressive development of the monitoring system is the policing of the shortwaves of the air for broadcasts transmitted round the world by other nations, and in particular by enemy powers. This work is handled by the

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\*Quoted from the 7th Annual Report of the Federal Communications Commission.



Foreign Broadcast Monitoring Service, created in February 1941 by the FCC in co-operation with the Defense Communications Board. Its main uses are twofold. First and foremost, it is a news service. It has, in fact, proved itself the most comprehensive news service in existence, and as such will probably be indispensable in the future even in peacetime. The amount of news thus gathered in far exceeds the total collected by all private news agencies. It is remarkable, moreover, not only for its comprehensiveness but for its speed. A radio broadcast is often the first means of discovering a news event. An example of a news scoop (by the British monitoring service) was the declaration of war by Italy. This occurred in a speech by Mussolini, which was picked up in Britain and communicated to the Cabinet Secretariat within a couple of minutes.

The second use of international monitoring is that of the analysis of foreign propaganda. The importance of knowing what propaganda goes out from enemy countries is obvious. Even more important is the *comparative analysis* of the different propaganda slants devised for different nations. The advantages of such analysis will be seen from what follows.

Enemy radio propaganda, as we have seen, is closely related to political policy and to the strategy of the shooting war. The analysis of propaganda is thus a means of detecting the enemy's next move. For almost every political, diplomatic, or military move is preceded by changes in the direction of their propaganda. Thus a policy can be detected in broadcasts long before it is announced officially or rumored in the press. It was, for instance, a change in tone in certain foreign broadcasts which gave the first clue to Japan's intention to go into Indo-China. But perhaps the most striking example of how radio propaganda foreshadows coming events is that of Germany's change of policy towards Russia. It is part of German propaganda technique to put out apparently innocent news items from their subsidiary stations in occupied territories and from that point to develop the topic in various ways. In April of last year monitors noted one day that three such items, with an anti-Russian tendency, had

come out over stations in Copenhagen and Oslo. The then head of the BBC's research unit immediately sensed a change of front. German methods, we have said, are inelastic. It was such inelasticity that gave Britain the clue on this occasion. If the normal rate of build-up were in this case followed, it was estimated that, in the light of past experience, an attack on Russia might be expected in about eight weeks. The forecast proved to be but three days out!

Analysis of enemy propaganda also helps us to formulate, time, and redirect our own. In other words, it makes possible a more precise and timely counter-propaganda on our part both to the enemy, to neutrals, and to oppressed nations. It helps also to still fears at home. For, as we have seen, despite the shortage of listeners, enemy propaganda is carried far and wide by rumors. To friend and foe alike, monitoring and analysis is the means of proving how unreliable are enemy sources of information. The British have devised a special program called 'Listening Post' to prove this fact. It is a revelation of the aims and methods of Dr. Goebbel's misinformation bureau. Each night it analyzes a new aspect of enemy propaganda, exposes the way in which one story is told in Germany, while quite different versions of the same story go out in other languages. These are put side by side, for the listener to judge for himself the value of news from Axis sources. 'Listening Post' is a regular feature of the BBC's shortwave service to North America.

Monitoring is also used to gauge the extent of listening *within* enemy countries to our own propaganda broadcasts. Of this, of course, there can be very little direct evidence. It has to be gauged by analysis of the efforts made by the Germans to deny or disprove points and information which the German people could only have got by tuning in to broadcasts originating in the United Nations.

Thus foreign monitoring is a new kind of secret service, dependent not on the physical presence of our agents in enemy countries, but on the deductive and analytical abilities of men scrutinizing what the enemy himself says. On the staff of the monitoring service are many skilled psychologists, long trained to deduce a state of mind from the evidence of

what a person says. These men are, in fact, day by day writing a series of psychological detective stories. The scale of operations is staggering. Four listening posts of the FCC's National Defense Operations Section are exclusively attuned to foreign broadcasts. One of these, at Silver Hill, Maryland, listens to broadcasts from the Near and Middle East and Africa. Another at San Turce, Puerto Rico, tunes in to broadcasts directed to Latin America. A third, at Kingsville, Texas, listens to broadcasts from South and Central America; while the fourth at Portland, Oregon, covers the Far East. Each of these monitoring units is staffed with expert engineers, linguists, and analysts. Hundreds of experts are employed. Over thirty languages are covered. Every broadcast is recorded while the monitor at the same time makes notes on it. The messages are translated, summarized, and immediately communicated to the appropriate offices in Washington. Working in three shifts of eight hours each, the monitors work round the clock, seven days a week. Speeches, news, and entertainment, even musical programs, are included and carefully watched for intelligence and trends. On at least one occasion the conveyance of a code message was spotted by the suspicious recurrence in a dance band session of a curious theme!

Practically a million words a day in all these languages are daily recorded and summarized. They are reduced to a digest of some forty or fifty thousand words, one edition going out daily to government offices. A weekly summary, containing more analytical material, supplements the daily digest. It is as though ten full-length novels were reduced to one short novel every day of every week of every year. Our own monitoring service is closely associated with that of the British. The summaries compiled by the two nations are exchanged, and we have our own listening unit located in Great Britain, supplementing the work of the four monitoring stations in this country. Their summaries are daily communicated by radio and by cable, and embodied in the main reports. Copies of the summaries of these million-odd words a day are on the desk of the right men in the right government departments within a few hours of the monitoring of the last word. The

weekly analysis of monitoring material provides the best general document for a study of political and military affairs from the point of view of their effect on public opinion.

### **3. Radio's Use By The Fighting Services**

Details and technicalities about the use of radio by the War and Navy Departments are shrouded in necessary mystery. It is too vital an instrument of war for any facts to be disclosed that might be of use to the enemy. It is, however, no secret to say that use of radio is vital to the success of practically every operation — on land, on sea, and in the air — in modern war. The reason for this is obvious. The key to modern strategy is, first, mobility, second, detailed co-ordination between all units co-operating in attack. Mobility is achieved by the use of mechanized units, tanks, armored cars, et cetera, and planes. Its object is deep penetration of the enemy's lines and the rapid disorganization and destruction of their lines of communication and supplies. Such mobility, however, is achieved at a price. The greater the speed of action, the greater the distance covered, the harder the problem of co-ordination and control. Everything depends on reliable communication. Radio alone makes such control possible and adjusts the disproportionate speed of the advance of infantry and tanks and planes by linking each to each. All but the smallest units of army, navy, and air force have radio equipment. The extent of the equipment may be said to be proportionate to the speed and mobility of the unit in question. Thus obviously every plane will have radio equipment. The layman may be surprised to know that every tank also has similar equipment. Each has a receiving set. Each platoon leader (four tanks) has both a receiving and transmitting set, the receiver to keep him in touch with the company commander, the transmitter to enable him to direct his unit in action. For, once engaged in battle, radio is the sole means of communication between tanks. The infantry, moving less rapidly, has less elaborate equipment. In our army, the division is the smallest unit which has assigned to it a complete

unit of the Signal Corps, comprising the use of telephone, telegraph, radio, and other means of communication.

Radio thus constitutes the ears of modern armies, providing direction and control of action within units and between units. It was such co-ordinated action (between the air and sea arms) which made possible the sinking of the Bismarck. Radio was the means. It was by radio that the plane which spotted the Bismarck was able to call for help, to mark the ship's course and speed, and thereby to bring about her eventual destruction. The success of the German armies has been largely due to the astonishing efficiency of their co-ordinated control over different arms of the service. The success of the American Volunteer Corps in the Far East is largely due to similar co-ordination between the American flyers and their Chinese collaborators. Chinese spotters, hidden in the jungle and on mountain tops, each equipped with radio transmitting apparatus, have kept the Volunteer Corps constantly in touch with the movements of the enemy, so that not once have their planes been caught grounded and helpless. The Chinese, indeed, having learned from bitter experience how urgent is the need for such co-ordinated action, have developed an organization so efficient that Japanese raids on Chungking are notified by a vast network of spotters a full half-hour (the equivalent of two hundred-odd miles in flying time) in advance of their arrival. Not only the coming of a raid but the exact number of the planes is thus communicated.

Radio, moreover, constitutes not only the ears but the eyes of modern warfare, as British listeners, for instance, discovered to their cost at the outbreak of war. Civilians were at first puzzled to know why television, which was just becoming popular, suddenly ceased to function. The secret eventually leaked out. The short wavelengths used by television were needed for spotting and locating enemy raiders coming in across the coast to bomb the cities of England. British listeners similarly lost their one powerful longwave transmitter at the outbreak of war. For radio beams are to the modern airplane the equivalent of an arterial highway. Long before the outbreak of war, pilots of Imperial Airways flew in 'blind' to

their destination at Croydon from as far out as Marseilles along the aerial highway of the Daventry longwave transmitter. The danger involved in the directional use of radio wavelengths was so great as to involve the British in the complete reorganization of their broadcasting system and the 'scrambling' of wavelengths by an ingenious technical device which insured that no German planes could use them to reach their destination.

To Britain we may also turn for illustration of what, to the layman, may seem the most fantastic use of radio as a seeing eye. I quote from an account of Britain's system of 'regional control.'

'Regional control in the RAF is a name covering a complex organization of instruments, of information and communication, which functions with lightning rapidity and almost incredible sureness. It is a system for saving life. Indeed, it can be said that in the last few weeks it has saved the equivalent of whole squadrons of planes *and* their crews from certain destruction. It has been described as the biggest single contribution made to the safety of flight during the past decade . . . The DTC or 'Descent through Cloud' system as developed by the RAF is an elaborate system of direction finding and communication with lost aircraft. It works at a split-second rate, and by it aircraft can be 'homed' onto the landing ground through clouds and clear of all obstacles in the path of its approach. An aircraft above clouds and with the ground totally obscured, lost and perhaps disabled, sends out its S.O.S. After being recognized and his position fixed by direction finding apparatus, the pilot is given a course which will bring him to the edge of the airdrome. He is also given barometric pressure, so that his height-finding apparatus may be accurate, and other information for his instrument panel. He flies blind along the given course for some time, then control speaks to him again. 'After you get the signal IADOM [code letters meaning 'you are now over the airdrome'] fly on a course of 0 6 2 degrees for three minutes, 30 seconds.' Comes the signal IADOM, and while he is flying on the given course the pilot gets the signal COD [meaning 'reduce height']. This he does until he breaks

cloud at a point known to the controller and to which, in fact, he has been guided. The pilot then asks, 'Give me homing bearings,' and on these bearings he turns back again to the airdrome which is still hidden from him. Again he asks for a new course, which is given. The controller notes his approach and that he is clear of obstacles and losing height at the correct angle. Then he gives him the signal, QQQ ['land directly'].

An amplified form of the DTC system is what the British call the ZZ system (ZZ means when visibility is below a thousand yards and lowest cloud base is below five hundred feet). This system is almost incredibly efficient. As one controller put it, 'We have brought lost aircraft in on ZZ when it was so thick that even the birds had to get down and walk. The ZZ system is so perfect that we practically bring them in by the scruff of the neck and put them down.' The following will show the confidence of the control station in the system. At one station, fog-bound and in darkness, and with a fifteen-ton bomber careering at two hundred miles an hour only a few score feet above, the controller stood at the door of his hut with a microphone saying, 'Port engine . . . starboard engine,' and giving similar orders as calmly as if he was directing a small motorboat alongside a jetty on a smooth sunlit lake.

So much for the basis on which regional control works. Next a few more points about its operational qualities. It can put aircraft *out* to a given spot as well as bring them in under conditions which would have been deemed impossible only a year or two ago. It can direct aircraft to any spot it pleases and the controller can know with absolute certainty from minute to minute where that aircraft is on its course, though he may be sitting in an office hundreds of miles away. United States bombers are in fact being ferried across the Atlantic under regional control with perfect safety. They are being guided away from enemy patrols, the presence of which is sometimes unknown to the ferry pilots. The co-ordination between all the various satellite centers of regional control all over the country is so complete, and exchange of information so rapid, that a controller sitting up on the northeastern

coast of England can, if necessary, put an aircraft down in a field in Cornwall. They call that remote control. As an example of remote control operation here is the story of three great Sunderland planes.

These three Sunderlands, the big twenty-five ton flying boats, had been 550 miles out into the Atlantic, working fan-wise in their daily routine, hunting for U-boats, and were now coming home. Just over a hundred miles from the British coast they simultaneously received reports that the weather fronts at their west coast bases had collapsed. During the last forty-five minutes of their flight, worse reports came in. The weather had now broken down along the whole of the western and southern coast of England, and it was impossible to land anywhere along this line. By now the Sunderlands had travelled more than 1300 miles. They were nearing the end of their fuel resources. Darkness was coming on, and the coastwise storm was increasing. Something had to be done. So regional control was called in.

The controllers spoke to each other all around Britain, searching for one place, one nook or cranny of reasonably smooth water where these three great boats could be put down with safety. The place was found, a little bay in the far northeast of Scotland! But the Sunderlands were still out in the Atlantic off the north channel. A single controller took them over and the Sunderlands were told to obey his instructions. He took them into the teeth of a frightful gale on the first stage of the journey. At one time they were flying only 200 feet above the Atlantic wave tops. Then he brought them in over Scotland. Now mountain tops had to be crossed in flying boats, in darkness and in nil visibility. He told them to climb to 7000 feet and, sitting in his office hundreds of miles away, he brought them in over the Grampians and out into the North Sea. Then in again and down into this little Scottish cove. From 200 feet over the Atlantic to 7000 feet over the mountains of Scotland — \$1,500,000 worth of flying boats with thirty-three lives on board!\*

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\*From *London Calling*, official journal of the British Broadcasting Corporation, by permission.



This story reminds us that our airpilots contend not only with the enemy but with the hazards of weather. Weather reports are vital to safe flying and again it is radio which makes it possible to get in the reports and transmit them to planes. These reports come in at times from an altitude of fifteen miles. At certain weather stations radiosonds observations of the upper atmosphere are made. This is done by the use of delicate radio equipment. A small radio-sending set is attached to a six-foot balloon, which rises of its own accord, carrying the radio equipment, which immediately begins to broadcast to a receiver in a weather station the conditions of the atmosphere found through effects on the enclosed instruments. Changing pressure temperatures and varying amounts of moisture in the air are thus recorded. The balloon ascends to an altitude of about 70,000 feet where it has reached a diameter of twenty-five feet; whereupon it bursts and the radio falls slowly to earth, attached to a parachute. The address of the weather station is attached and the finder upon returning the minute radio receives \$5 from Uncle Sam!

Endless similar instances of the use of radio could be quoted to show its various and vital uses. But the whole story can be epitomized in terms of a simple simile. A modern army, or for that matter a modern fleet, is an amalgam of highly specialized units. Success in action depends upon co-ordination, *action together* under unified direction and control. An army of men and machines fighting a battle is like an orchestra of players and instruments performing a symphony. One discordant note by any instrument and the perfect performance of the work is ruined. The commander-in-chief is in war the equivalent of the orchestra conductor. *His baton is the radio.* Radio, at times alone, and above all other means makes possible co-ordinated action, direction, and control where tanks and armored cars and planes move at incredible speeds and traverse the great distances which the execution of modern strategy demands.

#### 4. Radio On The Home Front

On September 24, 1940, the President created the Defense Communications Board. Responsible only to the President, this board was instructed to draw up plans to meet the needs of the armed forces, of other government agencies, and of industry, with the requirements of national defense as the primary consideration. On December 10, 1942, the President transferred to the DCB all power over broadcasting vested in him under the Federal Communications Act. Thus radio was harnessed to the war effort. The DCB covers all phases of radio except that of censorship. It is assisted by a network of supplementary committees concerned with the multifarious aspects of domestic and international broadcasting and other means of communication. But, despite this welter of committees, radio as an industry retains its independence. In most countries radio in wartime has been taken over, more or less, by government. With us it remains free. It has entered, however, into voluntary partnership with government. The extent of its collaboration may be judged by the fact that over forty government agencies have dealings with radio. Their purpose is twofold:

(1) To voice and explain, through radio, the government's needs of the people. Thus the war and navy departments have used radio for recruiting purposes. The Treasury Department has by radio promoted the sale of defense bonds, with consummate success. More recently, rationing, the necessity to conserve gas, rubber, and other commodities, information about price fixing and similar developing necessities of war time have had to be explained.

(2) To interpret to the people the functions of the government (to explain what it is doing and why) and to sustain morale by a full, clear, and convincing explanation of the purpose and implications of the country's war effort. The President, in a broadcast earlier this year, suggested that such explanation involved the treatment of six themes: (1) the issue at stake in this war; (2) the nature of the enemy we are fighting against; (3) the United Nations with whom we fight — their contribution to the war and their significance

to us as free peoples; (4) our fighting forces; (5) production for war; (6) sacrifice — what is demanded of us and why. The list is by no means exhaustive. It provides merely the basic framework for an intelligent information service. But it suggests the enormity of the task with which both government and radio were faced at the outbreak of war.

Even in peace-time the increasing demands of independent government agencies for time on the air had presented an embarrassing problem to the radio industry. With the advent of war, it became obvious and urgent that some regulatory body should be set up to control the flow of government messages and information.

It was to fulfil this function that the Office of Facts and Figures, now absorbed by the Office of War Information, was created. As its name implies, this office is charged to assemble and pass on to the appropriate channels of communication — radio, press, movies, et cetera — the facts and figures about the war effort and the activities and policies of government which a democratic people are entitled to know. Through its Intelligence Division, it similarly assembles facts about public opinion and the fluctuating pulse rate of morale of which a responsible democratic government needs to be informed.

Its Radio Division has several functions, of which the more important are worth listing.

1. It acts as broker for government agencies which have messages and appeals to communicate to the people. As broker, the Radio Division negotiates with the industry for the most favorable and effective placement of such messages. The problem to be solved was both quantitative and qualitative. The public and the radio industry both needed protection from an unreasonable surfeit of such messages. Too many messages were bound to produce 'sales resistance' and thus to defeat their own ends. It was also evident that, to be effective, these messages and appeals had to be phrased as skilfully, clearly, and persuasively as possible. Both problems have by now been solved with a considerable measure of success by what is called the Priority Allocation Plan. This plan ingeniously contrives to place messages in programs in

such a way that they reach a maximum weekly audience with a minimum of repetition. Week by week priority is conceded to certain messages by mutual agreement between the government agencies concerned. These messages are then placed and spaced in network programs which have the highest audience ratings. Government agencies thus secure for their messages a maximum coverage while the public is spared monotonous and excessive repetition.

Before the scheme had been finally completed, the OFF was asked to deal urgently with the problem of forestalling the shortage of transport facilities for coal deliveries, which was anticipated in the fall. To deal with this emergency, the working principles of the Priority Allocation Plan were immediately applied and the message 'Buy coal now' went out over the air. This dress rehearsal for the plan achieved results which exceeded the hopes of its most sanguine supporters. A week's campaign revolutionized the buying habits of the American public. For years past, the average weekly output of coal at the time of year at which the campaign was launched had been approximately 7,000,000 tons. For each of the three weeks after the 'buy coal' campaign, output exceeded 11,000,000 tons! It remains to be seen whether appeals less immediately and obviously related to the self-interest of consumers will achieve equivalent success. But this first experiment at least augurs well for the scheme.

2. The Radio Division similarly acts as broker for government departments wishing to originate programs on the air. Such programs as the Army and Navy Hour and those sponsored by the Treasury and War Production Board are negotiated through the Office of Facts and Figures and placed on the most favorable terms and with the least possible embarrassment to the radio industry.

3. The Radio Division offers advice to the industry on aspects of government policy which need to be emphasized or illustrated. Inquiries how best to illustrate the President's six themes, for instance, are met and sources of information and material are indicated. The Office of Facts and Figures does not itself write and produce radio programs.

In our domestic broadcasting, we have been more fortunate

than other nations. We have not, like Britain, had to sacrifice television, or to reshuffle our wavelengths, or to curtail our program output. It is, in fact, a case of business as usual, but for a few restrictions demanded by the circumstances of war. The physical structure of our broadcasting system is frozen for the duration. The building of new stations is limited in order to conserve materials necessary for the prosecution of the war. The radio amateur, as we have seen, has had to go. Radio, like the press, is subject to censorship. We have lost our weather reports, as well as certain programs. Request programs, quiz programs, forums and interviews, commentaries and descriptions, all to some extent have come under the censor's ban. We can no longer telephone requests for musical selections on the radio. Audience participation has had to be discontinued, or at least limited in form. Any program which permits public access to an open microphone is dangerous. But all these are minor inconveniences and do not affect the main structure of programs to which we have become accustomed in peacetime.

But, though the superficial aspect of radio on the home front seems little changed by war, both the nature of its services and its importance as a medium of communication have acquired a new significance. In peace we listeners used radio mainly for our pleasure, as a toy. War forces us to recognize it as a tool, indispensable to the prosecution of the war and to preparation for the peace. Our enemies have here forestalled us. Exploiting our childlike use of it, they long ago converted radio into a tool with a destructive purpose. They have used it, like a demented dentist, as a drill to work on the decay in our wisdom teeth and drive through to the nerve ends of our morale. Belatedly we recognize that we must 'put away childish things.' The challenge of war, to radio and to radio's listeners, is challenge to adult responsibility. By this criterion we must define its purpose and judge the value of its services on the home front. Both the matter and the manner of radio's communication are being crucially affected by the war. Its uses on the home front fall into three main categories, none of them wholly new, but each affected by the war, by the country's need of us, and, equally, by our

own needs, as we emerge from the first dazed bewilderment that war induces and grope towards the self-discovery and the new clarity of mind and purpose that is asked of us.

1. In war, more even than in peace, we look to radio first and foremost for news. ~~The wartime requirements of a radio news service are (a) authenticity. Immediacy is less important. To sacrifice authenticity in the interest of a scoop is dangerous. We are used to the scare headlines of the press. Radio's equivalent of headlines (sensational tone and over-dramatic presentation) are even more dangerous because of radio's hold on the listener's imagination. We need no fuel for the flames of our anxiety. We have seen, in the context of propaganda, how subtly and how insistently the enemy seeks to engender tension and confusion. Quotation from the enemy is thus a service to the enemy.~~

(b) We rely on radio not only for authentic news, but for perspective. To highlight minor incidents is to breed misunderstanding and false hopes. The needs of wartime in this respect are not different from those of peace. They are simply greater.

(c) The change of mind, which war experience forces on us, makes us more sensitive to the incongruous. Crude advertising alongside fearful news, the exploitation, in the interest of sales appeal, of our anxiety and of our patriotism, these are disservices to which listeners are reacting with increasing impatience and distaste. The public is slow both to appreciate and to articulate its changed reaction. But a piecemeal formulation of listeners' new demands of radio in these respects is taking place. And radio itself is taking note of two emergent imperatives — of the demand for tone and for meticulous discretion.

2. The wartime listener looks to radio, secondly, for relief from care, for relaxation. Laughter and entertainment are more than ever necessary. But again war qualifies the nature of the need. We need a tonic, not a laxative. We need, if we do not yet clamor for, an end to all invitation to cheap, vicarious experience. The morbid indulgence in escapism, for which peacetime radio sometimes catered, always a doubtful luxury, is in war a dangerous liability. War calls for unity, for

integrated action and purpose. The integration of each individual personality is as urgent as that of the nation as a whole. Only a split personality can respond at once to dope and inspiration. The public's response to what is cheap and crude is, in fact, a measure of our social danger. Its indulgence is a risk that a nation at war cannot afford. Every countermeasure, every means of cure that insight and ingenuity can devise are desperately needed. For this is total war, war on civilians as well as on armies — war on the mind and on morale as much as on our bodies. Hence the significance of radio's third and most important use in war time — to build and to sustain morale.

3. Morale: Pearl Harbor found our fighting forces off guard and unprepared. The problem of morale is the problem of mental and emotional unpreparedness. Our experience of life beyond our shores has been vicarious. The war and the world have been presented to us — on movie screens, in newspapers, and by radio — like light through water, by refracted rays. We have seen them indirectly and at second hand. Even of our own world of America our knowledge and experience has come in greater part through words, and a surfeit and abuse of words — in print and over the radio — has dulled our sense of their significance. Words and language now stand as it were *between* us and reality. The problem of morale is to restore to war, to the world, and to words, that reality of which our remoteness has deprived them. Radio has proved itself a flame at which popular imagination catches fire. Its wartime function, therefore, is so to kindle our imagination that we see three things clearly — the issue at stake in the war conflict, still little understood; the true nature of our democratic task, in our domestic and our international relations; and the shape of things to come, the changes which war precipitates and to which we must adjust ourselves.

To this task, the radio industry, collaborating with the government, is bending all its energy. Our enemies have whipped their own countrymen into a state of fanatical belief in the virtue of their cause by a crude and unscrupulous process of indoctrination. It is for us to meet blind fanaticism

with clear-sighted faith. Radio is attempting to build that faith in terms and in a context that ordinary men and women recognize and understand. Its function is to execute the strategy of truth.

Thus radio enters in war on a new chapter of opportunity and of responsibility. War is its testing time. Radio's future, like our own, depends upon whether it learns the lessons of self-discipline imposed by war, and whether it, and we, read rightly the demands upon us of our future destiny. War in one sense is an interruption and distraction from 'normal' life. In another and truer sense, it is the prelude to a new way of life. We began this brief survey of radio in wartime with our eyes on peace. Let us end it so.

War precipitates change. What changes in radio and in radio's listeners does this review of its role in wartime foreshadow? Let us start with ourselves. Radio in wartime has exposed us for what we are — easy preys to fear and to suspicion, insecure, bounded by close horizons, in our experience and in our outlook. All these are dangerous in war — and in, and for, the peace. Experience of suffering and contact with reality are likely to provoke new needs in us, to change our outlook and our standards. Already we grow impatient of what is cheap and meretricious. Our nerves are taut and we begin to seek an inward quietness and assurance born of a more sober faith and a clearer understanding of what is demanded of us. We move slowly, painfully to a fuller integration of our personality. The danger of peace is the danger of relaxation. The message of war is that of the necessity for continued effort at a higher level of intention and at a quicker pace of adaption. Few of us are likely to respond unaided to such exacting demands. We need help and we are responsive to leadership. Radio can help, and lead.

Thus radio's wartime services will not lapse with peace. Activity in the international field of shortwave radio will not diminish. It will be redirected, towards fuller mutual understanding, and it will be replanned. We can forecast a more liberal exchange of programs between nations, such as obtains already in a small way between ourselves and Canada. We shall thus realize in peace the fruits of wartime



collaboration, and as with trade, so with ideas — exchange will be on a basis of planned reciprocity. Radio will help us on to global thought, inducing in the process that discretion and sense of proportion, disregard of which is being proved so perilous in war. Radio will thus affect profoundly the tone and substance of what men say in public, contributing in time to the good manners of communication. The vast organization of wartime monitoring services are likely to become part of the peacetime system of news gathering. Psychological analysis of the content of world-wide broadcasts may develop into a new arm of our political intelligence service.

On the home front the strategy of truth is likely to be a continuing necessity. Its extent and nature will depend on factors outside radio's control — on the wisdom and success of government in promoting the welfare of the people, and on the speed with which we, the people, assume adult responsibility. Human memory is short, our intentions are wayward. Experience of past wars suggests that we shall need every possible incentive to the maintenance and furtherance of our morale in peace. Radio's part in this achievement is clear. Its successful service depends on its grasp of three major necessities.

1. Our need to be safeguarded against ourselves. Radio can help us by eschewing all indulgence of our weaknesses, our waywardness and our morbid propensities. The peacetime propaganda of morale requires of radio a consistent policy. The uniform maintenance of tone throughout all the variety of its program services.

2. The necessity for faith in people, for appreciation of their capacity to rise to an occasion, to follow a lead. The danger of our democracy is the indulgence and false flattery of the people. Demagogues do this. For radio to take a lead in this matter is not to usurp its functions but to fulfil its proper service. Its dual task is to 'think like a wise man but communicate in the language of the people.'

3. The necessity to recognize that radio's wartime collaboration with government (the relation between the two partners is at the present time being slowly worked out)

is prelude to a continuing and even more extensive partnership in peacetime. The sense of belonging to society, which in a mechanized world of large-scale organization many have lost, must be restored if government is to function and people are to recognize their part and privilege in the execution of its plans. Radio's role here is that of an interpreter. These are forecasts of necessity. The outcome of the war itself and of the peace beyond depends on whether we and radio grasp in time the logic of necessity.

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